



Understanding the evolution of progressives

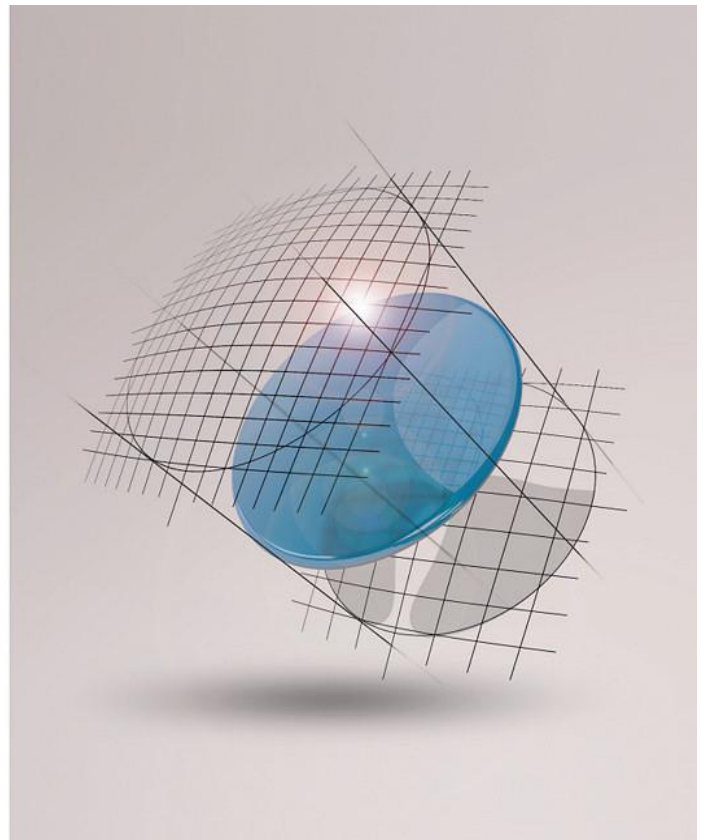
Digital Progressive Lenses

What are the advantages of digital surfacing?

Digital surfacing technology brought a major revolution to the optical manufacturing industry. This lens production technology allows us to generate and polish a complex surface on the back side that is specifically designed for each lens. With this new production method, the lens is processed from a semi-finished blank that has a spherical front surface. The progressive design, combined with the prescription, is processed on the back surface of the lens. The main advantage offered by this technology is the ability to produce personalized lenses. The lens design becomes unique, according to the prescription, material, frame and even the visual preferences selected by each wearer.

What makes ELYSIUM® lenses better?

The term "digital lens" applies to any lens made with digital surfacing technology. In order to achieve optical performance superior to that of conventional progressives, the lens has to be calculated using an advanced lens design technology. The digital surface has to be computed in a way that uses the wearer's individual information to provide better vision through every point of the lens for that specific person. This is exactly what ELYSIUM® lenses provide thanks to Digital Ray-Path® technology.



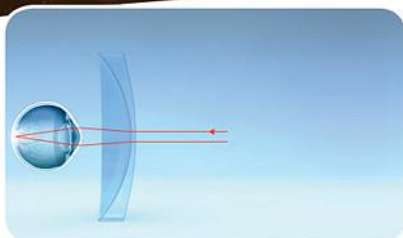
Elyssium: A new generation of Multifocal spectacle lenses

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Digital Ray-Path® is a lens design technology that improves vision for the wearer through every point of the lens by implementing a realistic computerized simulation of the lens' optical behavior when it is placed in front of the wearer's eye. This simulation analyzes the oblique

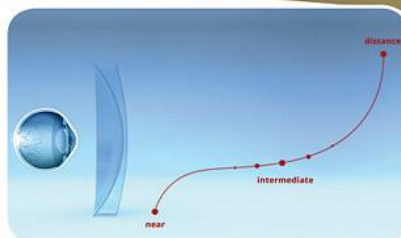
aberrations, which are optical effects that have a negative impact on the lens' visual performance. These aberrations are evaluated at every point of the lens, taking into account the rotation of the eye in conjunction with the positioning of the lens. With this information, Digital Ray-Path® is able

to optimize the lens surface by calculating and correctly compensating for these undesired aberrations. As a result, Digital Ray-Path® creates a design that delivers better vision through every point of the lens. The wearer will perceive wider, more comfortable visual fields in the distance, intermediate and near vision zones.



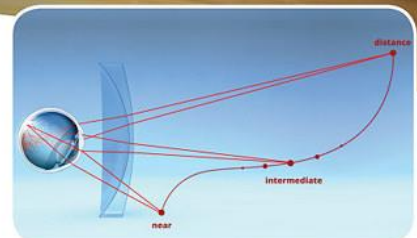
1. Eye-Lens System

Digital Ray-Path® prepares a simulation of the lens in front of the eye, taking into account all of the wearer's personalization parameters. The more parameters that are measured and provided, such as pantoscopic angle or back vertex distance, the more accurate the simulation will be.



2. Space Object

Digital Ray-Path® uses information about the progressive design selected for the wearer to determine which areas of the lens are created for distance, intermediate or near vision.



3. Ray Tracing

Digital Ray-Path® simulates how the eye rotates to look in all directions, at various distances. For each position of the eye, it computes the oblique aberrations that would limit the visual quality through that particular point of the lens. Digital Ray-Path® uses this information to minimize these undesired aberrations point by point across the lens.

RESULT: A UNIQUE DIGITAL LENS, OPTIMIZED FOR EACH INDIVIDUAL WEARER

If you have found this article interesting and have questions regarding it, then please do get in touch either for a chat by phone, or please feel free to email me.

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